

# PATENT ABSTRACTS OF JAPAN

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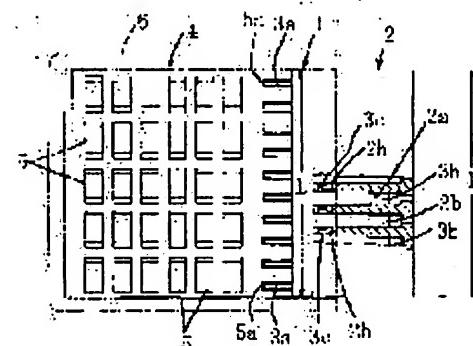
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## (54) ELECTRONIC CIRCUIT CASE

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide an electronic circuit case, capable of disposing plurality of printed wiring boards having mounted electronic circuits arranged in an electrical connector case.

**SOLUTION:** Fixtures 1, capable of fixing a plurality of connector terminals 3, 3, and so on in two columns are formed, a printed wiring board 4 having mounted electronic circuit is fit between the connector terminals 3, 3 inserted through and fixed to the fixtures 2, in the form of two columns, the board 4 is connected through soldering, etc., and terminal parts 3b, 3b, and so on of each connector terminal 3, 3, and so on are inserted in and fixed to a connector housing 2.



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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the electronic-circuitry case for arranging the printed wired board which carried the electronic circuitry in the electrical connector.

[0002]

[Description of the Prior Art] How to include conventionally printed wired board d which carried the electronic circuitry among the connector terminals b and c arranged in two trains at electrical connector a as shown in \*\* drawing 7 thru/or drawing 10 in the approach of arranging the printed wired board which carried the electronic circuitry in the electrical connector which has arranged the connector terminal in two trains, and connect with the connector terminals b and c electrically with soldering etc. in vertical both sides of this printed wired board d.

\*\* Set the location of the connection lead sections b1 and c1 to printed wired board d of the connector terminals b and c arranged in two trains at electrical connector a as shown in drawing 11 thru/or drawing 14 on the same flat surface, and they are Terminals b, --, c. -- How to set up in the direction of a train by turns, and connect with soldering etc. alternately in one side (for it to set to drawing 11 thru/or drawing 14, and to be a top face) of printed wired board d.

\*\* How to shift a location to the direction (insertion shaft orientations of a connector terminal) of printed wired board d, and connect electrically the connecting location (lead sections b1 and c1) of the connector terminals b and c arranged in two trains of electrical connector a with soldering etc. in one side (for it to set to drawing 15 thru/or drawing 18, and to be a top face) of printed wired board d, as shown in drawing 15 thru/or drawing 18. \*\* is known. In addition, in drawing 17 and drawing 18, e shows covering to drawing 9, drawing 10 and drawing 13, and the drawing 14 list.

[0003]

[Problem(s) to be Solved by the Invention] When the connector terminals b and c of electrical connector a become more than two two or more trains, the terminals b and c located between the opposite sections of printed wired board d and d comrade and the printed wired board concerned stop reaching the part which tools for connection, such as a soldering iron and an infrared beam, tend to connect, and it becomes impossible however, to connect them by the above-mentioned approach of \*\*, in case it connects electrically with soldering etc.

[0004] Although the connector terminal b exceeding two trains and c-- are connectable to printed wired board [ of one sheet ] d by the approach of the above-mentioned \*\* and \*\*, it is necessary to make area of printed wired board d large from the relation of the amount which can carry an electrical circuit to the volume of electrical connector a in this case, and the area of printed wired board d. moreover, the case where two or more trains arrangement of the printed wired board d is carried out -- between the opposite sections of printed wired board d and d comrade -- a connection terminal -- preparing -- since there is nothing, as for printed wired board d, two trains serve as a limit.

[0005] Furthermore, as shown in drawing 14 and drawing 18, in order that it may shift greatly from the fitting core f of electrical connector a and the mounting position to electrical connector a of printed wired board d may carry out eccentricity, the DETTO tooth space g is generated by this eccentricity, and it HE-lug[ single-sided ]-comes to be easy, the packaging density of electrical connector a is raised, and it is made more difficult than the fitting plane of projection of electrical connector a.

[0006]

[Objects of the Invention] This invention is what was made in view of such a trouble that the above-mentioned conventional technique has. Carry out insertion immobilization of the connector terminal at two trains, include this and a printed wired board in the holdown member formed so that it could fix two trains of connector terminals at a time, and it connects with it electrically. By carrying out insertion immobilization and constituting the terminal area of each connector terminal in connector housing As opposed to the field where two or more printed wired boards can be

arranged in the electronic-circuitry case by which two or more trains arrangement was carried out exceeding two trains in the connector terminal, and an electronic-circuitry case is moreover connected to it the electronic-circuitry case where the printed wired board incorporated adjoins -- a bad influence -- \*\*\*\*\* -- it aims at offering the electronic-circuitry case has few things, they boil packaging density markedly, and enabled it to improve.

[0007]

[Means for Solving the Problem] the printed wired board which carried the electronic circuitry between the connector terminals which the electronic-circuitry case applied to this invention in order to attain the above-mentioned purpose formed the connector terminal holddown member so that it could fix two trains of two or more connector terminals at a time, and inserted in this holddown member, and were fixed to two trains -- incorporating -- soldering etc. -- connecting -- the terminal area of each of said connector terminal -- connector housing -- insertion -- immobilization -- it is characterized by things.

[0008]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the electronic-circuitry case concerning this invention is explained with reference to a drawing. Drawing 1 shows the top view which cut a part of electronic-circuitry case concerning this invention which has arranged two trains of printed wired boards in which the electronic circuitry was carried. Drawing 2 The side elevation which cut a part of condition which showed in drawing 1 is shown. Drawing 3 The condition of having arranged two trains of things which inserted the connector terminal in two trains, fixed to the holddown member, incorporated the printed wired board which carried the electronic circuitry between these connector terminals, and were fixed with soldering etc., Each example and drawing 4 show the side elevation of drawing 3 and status idem for the top view of connector housing, the top view of a printed wired board is indicated to be the condition that drawing 5 fixed two trains of connector terminals to the holddown member, and drawing 6 shows the side elevation of the condition which showed in drawing 5.

[0009] By the insulating material, as shown in drawing 1 thru/or drawing 6, a holddown member 1 sets fixed spacing for two or more connector terminals 3 and 3 -- in the direction of breadth L, has height h which can be arranged in vertical 2 train, and is formed in the shape of an abbreviation oblong rectangle while being mostly formed in the same breadth L with the breadth l of the connector housing 2.

[0010] As shown in drawing 1 thru/or drawing 6, in the above-mentioned holddown member 1 two or more connector terminals 3 and 3 -- And penetrate to a cross direction (it sets to each drawing same as the above, and is a longitudinal direction), and it is made to have fixed to it. the direction of breadth L of the above-mentioned holddown member 1 -- fixed spacing -- setting -- vertical 2 train -- Between connection 3a of this each connector terminal 3 and 3 -- which projects from a holddown member 1 to the front (it sets to a Fig. same as the above, and is the left), and 3a While making it have formed in the spacing i which can insert the printed wired board 4 in which the electronic circuitry was carried, they are each connector terminals 3 and 3. -- Terminal area 3b and 3b-- is made to have projected from the holddown member 1 to back (for it to set to a Fig. same as the above, and to be the right).

[0011] Moreover, the slant ejection of the stop tabs 3c and 3c of terminal area 3b in each above-mentioned connector terminal 3 and 3 -- and 3b-- which have elasticity on base right-and-left both sides is carried out to a front outside, and they are made to have formed in it from the posterior part.

[0012] As shown in the above-mentioned connector housing 2 at drawing 1 and drawing 2, each above-mentioned connector terminal 3 and 3 -- Terminal area 3b, Two or more insertion hole 2a which carries out insertion immobilization of 3b--, and 2a-- are drilled. Each insertion hole 2a and 2a-- in a both-sides wall By inserting the above-mentioned terminal area 3b and 3b-- in each above-mentioned insertion hole 2a and 2a--, they are stop hole 2b and 2b so that it may stop with the above-mentioned stop tab 3c and 3c-- and the connector housing 2 may be fixed non-detachable with each connector terminal 3 and 3 --. -- It is made to have each formed.

[0013] In drawing 1 thru/or drawing 6, 5 shows the electronic-circuitry component of a printed wired board 4, and 6 shows covering in drawing 1 and drawing 2.

[0014] When it \*\* and is based on the electronic-circuitry case of this invention As shown in drawing 6, two or more connector terminals 3 and 3 -- are transfixed to drawing 2 and the drawing 4 list at a holddown member 1. Fixed spacing is set in the direction of breadth of this holddown member 1, and it arranges in vertical 2 train, and the above-mentioned connector terminal 3 and the printed wired board 4 of 3 -- which carried the electronic circuitry between connection 3a and 3a are inserted and incorporated. The above-mentioned connections 3a and 3a, It fixes to the above-mentioned holddown member 1 by connecting electrically the terminals 5a and 5a prepared in edge table flesh-side both sides of a printed wired board 4 with soldering etc., and, subsequently they are each terminals 3 and 3. -- Insertion immobilization is carried out and the connector housing 2 constitutes terminal areas 3b and 3b.

[0015] Although drawing 5 and drawing 6 showed the case where single-tier (piece) arrangement of the printed wired

board 4 was carried out this invention case is piling up up and down what the connector terminal 3 of two trains and 3 -- were placed between holddown members 1, and fixed the printed wired board 4, as shown in drawing 2 and drawing 4 as described above. The electrical connector of more than two two or more trains (the example of illustration two trains) can be obtained, and it becomes possible to carry out two or more trains arrangement of the printed wired board 4.

[0016] As some connector housing (anterior part) was shown in the printed wired board 4 of the single tier fixed to the holddown member 1 as described above, or two or more trains, 4 --, and holddown-member 1 list at drawing 1 and drawing 2, it holds in a case 6.

[0017]

[Effect of the Invention] Since this invention is constituted as explained above, two or more trains arrangement of a printed wired board can be closed by the electronic-circuitry case of two or more trains where the connector terminal exceeded not only the electronic-circuitry case of two trains but also two trains being acquired, if . As opposed to the core of the field of the connector fitting section of an electronic-circuitry case and by the conventional method

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

- [Drawing 1] It is the top view cutting and showing a part of electronic-circuitry case concerning this invention.
- [Drawing 2] It is the side elevation cutting and showing a part of case same as the above.
- [Drawing 3] It is each \*\*\*\* top view about the condition of having piled up two things which inserted two trains of connector terminals in the holddown member, fixed to it, incorporated the printed wired board between these connector terminals, and were fixed with soldering etc., and connector housing.
- [Drawing 4] It is the side elevation of the condition which showed in drawing 3 .
- [Drawing 5] It is each \*\*\*\* top view about the condition of having carried out 2 train insertion immobilization of the connector terminal at the holddown member, and a printed wired board.
- [Drawing 6] It is the side elevation of the condition which showed in drawing 5 .
- [Drawing 7] In the conventional electronic-circuitry case, it is each \*\*\*\* top view about the connector which has arranged the connector terminal in two trains, and a printed wired board.
- [Drawing 8] It is the side elevation of the condition which showed in drawing 7 .
- [Drawing 9] It is each \*\*\*\* top view about the conventional electronic-circuitry case which assembled the connector shown in drawing 7 and drawing 8 , and the printed wired board.
- [Drawing 10] It is the side elevation of the electronic-circuitry case shown in drawing 9 .
- [Drawing 11] In other conventional electronic-circuitry cases, it is each \*\*\* top view about the connector which has arranged two trains of connector terminals, and a printed wired board.
- [Drawing 12] It is the side elevation of the condition which shows in drawing 11 .
- [Drawing 13] It is the top view showing other conventional electronic-circuitry cases which assembled the connector shown in drawing 11 and drawing 12 , and the printed wired board.
- [Drawing 14] It is the side elevation of the electronic-circuitry case shown in drawing 13 .
- [Drawing 15] In the conventional electronic-circuitry case of further others, it is the top view showing a printed wired board with a connector.
- [Drawing 16] It is the side elevation of the condition which shows in drawing 15 .
- [Drawing 17] It is the top view of the electronic-circuitry case of others [ pan / the connector shown in drawing 15 and drawing 16 , and / which assembled the printed wired board ].
- [Drawing 18] It is the side elevation of the electronic-circuitry case shown in drawing 17 .

### [Description of Notations]

- 1 Holddown Member
- 2 Connector Housing
- 3 Connector Terminal
- 3b Terminal area
- 4 Printed Wired Board

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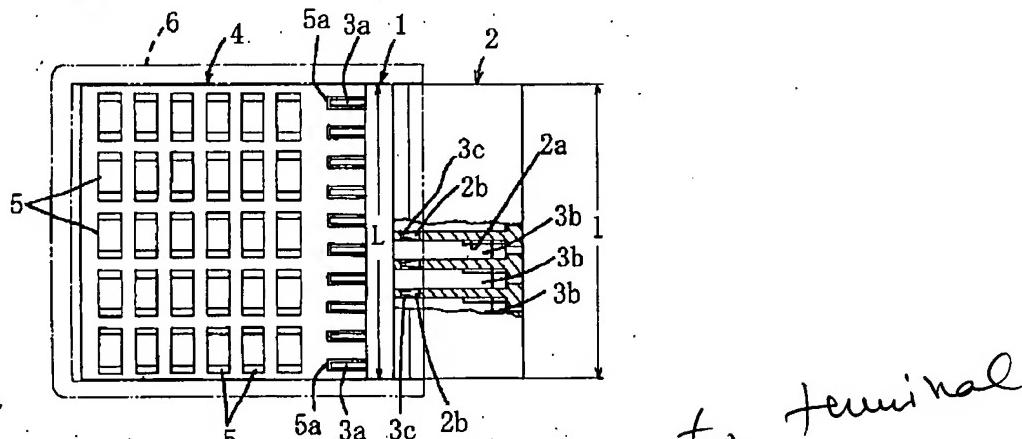
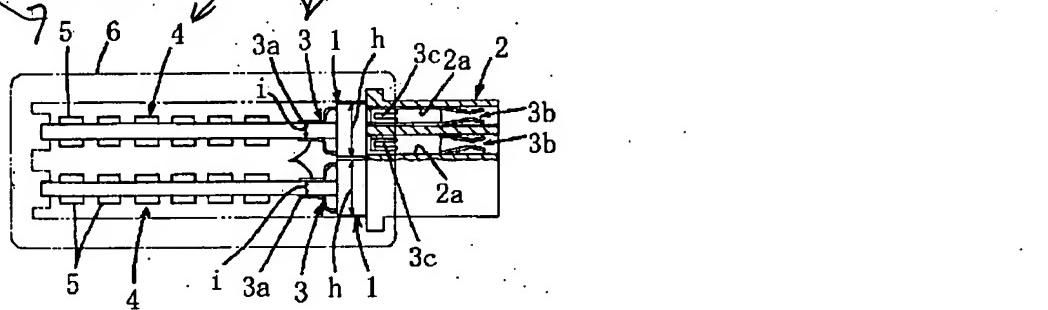
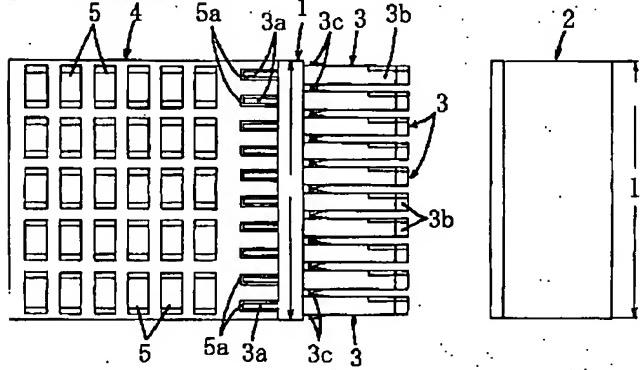
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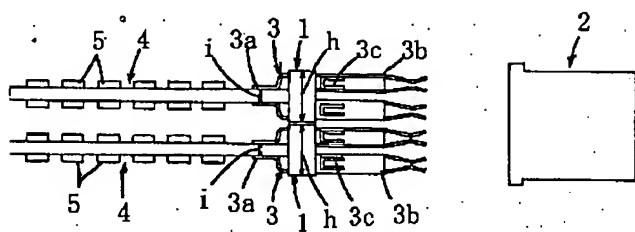
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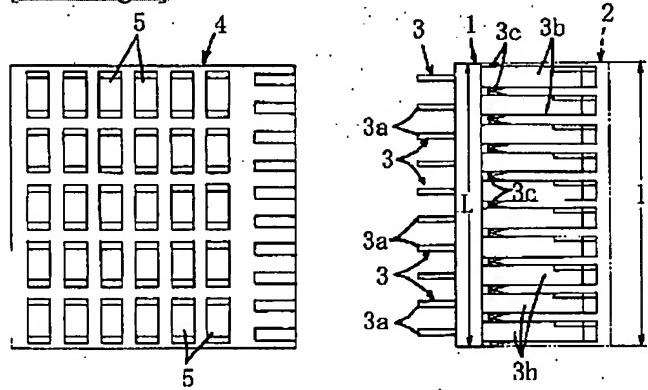
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## DRAWINGS

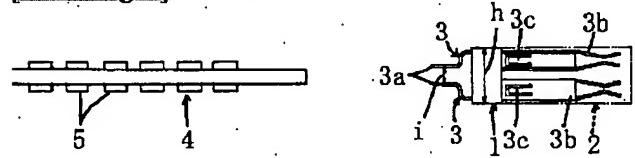
[Drawing 1][Drawing 2][Drawing 3][Drawing 4]



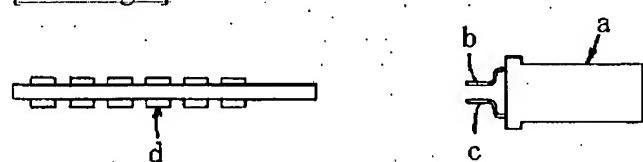
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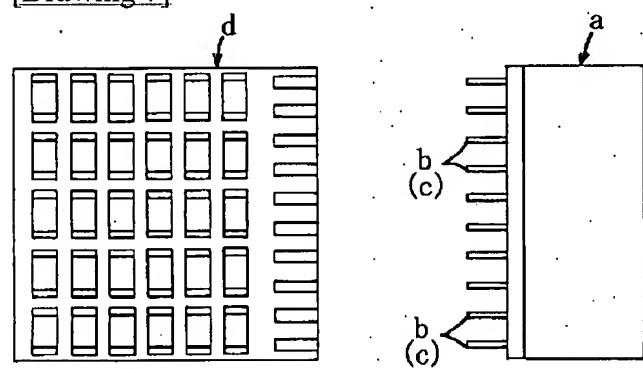
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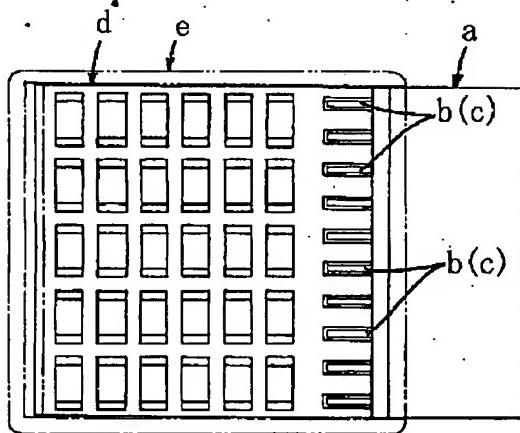
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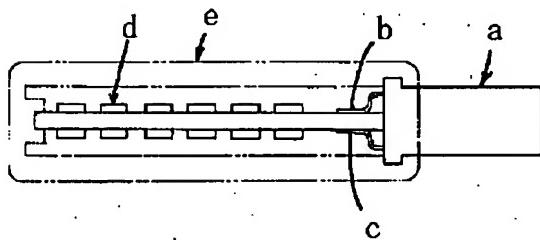
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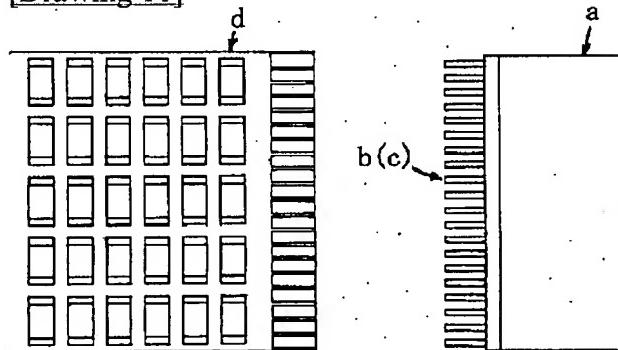
[Drawing 9]



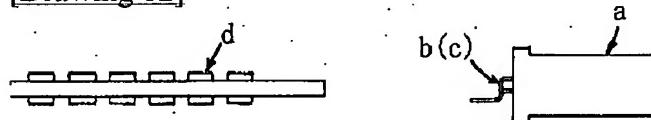
[Drawing 10]



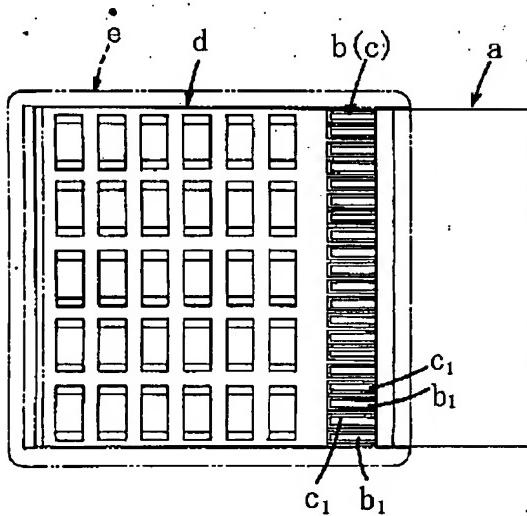
[Drawing 11]



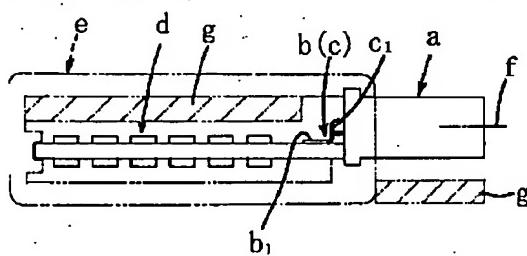
[Drawing 12]



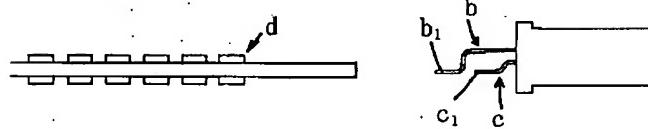
[Drawing 13]



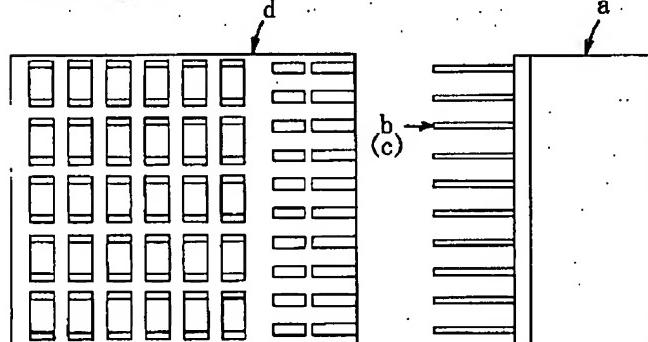
[Drawing 14]



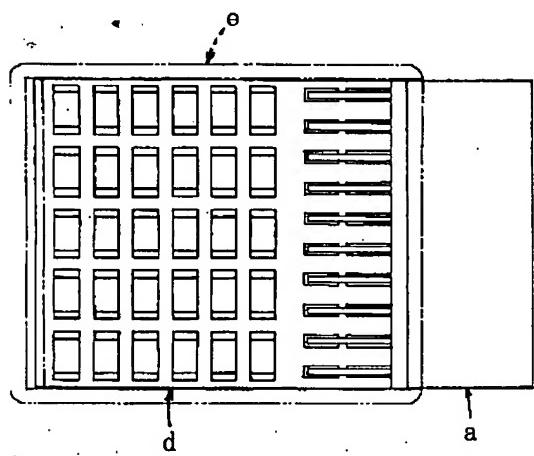
[Drawing 16]



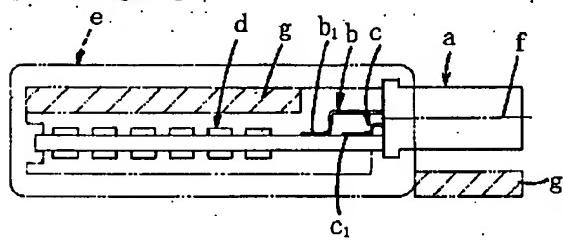
[Drawing 15]



[Drawing 17]



[Drawing 18]



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